

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

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1-9. Cancelled.

10. (Currently Amended) ~~The method of claim 9 wherein step a) comprises~~ A method of controlling the rate of an MPEG video stream to achieve a target bit rate, said method comprising the steps of:

- a) computing a rate reduction factor, wherein computing the rate reduction factor includes
- i) setting said rate reduction factor to and a rate increase variable to 0₁[[:]]
 - ii) adding the size of a current frame in a frame buffer to a total size variable₁[[:]]
 - iii) adding the duration of the current frame to a total delays variable₁[[:]]
 - iv) calculating a current value of the number of bits in a video buffer₁[[:]]
 - v) if the current value of the number of bits in the video buffer is less than the lower threshold, increasing said rate reduction factor₁[[:]]
 - vi) if the current value of the number of bits in the video buffer is greater than the upper threshold, increasing said rate increase variable₁[[:]] and
 - vii) repeating steps ii) to vi) for a plurality of frames in a said frame buffer₁[[.]]
- b) computing a quantizer scale;
- c) applying the results of steps a) and b) to the encoder to achieve said target bit rate;
- and
- d) repeating steps a) to c) for a plurality of frames in said video stream.

11. (Original) The method of claim 10 wherein step a) further comprises the steps of:

viii) calculating a rate reduction factor for the current frame if needed, otherwise setting a value for a channel bit rate.

12. (Original) The method of claim 10 wherein step b) further comprises the steps of:

i) calculating a cumulative distribution function for each macroblock in a current frame;

ii) initializing a quantizer multiplier array;

iii) setting the quantizer scale for each macroblock in the current frame;

iv) calculating a quantizer multiply for each macroblock in the current frame; and

vi) setting a quantizer scale code for each macroblock in the current frame.

13-18. Cancelled.

19. (Currently Amended) A computer readable medium encoded with a computer program including instructions for controlling the rate of an MPEG video stream to achieve a target bit rate, said instructions comprising, when executed by a processing device, The medium of claim 18 wherein step a) comprises the steps of:

a) computing a rate reduction factor, wherein computing the rate reduction factor includes

i) setting said rate reduction factor and a rate increase variable to 0₁[[:]]

ii) adding the size of a current frame in a frame buffer to a total size variable₁[[:]]

iii) adding the duration of said current frame to a total delays variable₁[[:]]

- iv) calculating a current value of the number of bits in a video buffer_i[[;]]
 - v) if the current value of the number of bits in the video buffer is less than the lower threshold, increasing said rate reduction factor_i[[;]]
 - vi) if the current value of the number of bits in the video buffer is greater than the upper threshold, increasing said rate increase variable_i[[;]] and
 - vii) repeating steps ii) to vi) for a plurality of frames in said frame buffer_i[[.]]
 - b) computing a quantizer scale;
 - c) applying the results of steps a) and b) to the encoder to achieve said target bit rate;
- and
- repeating steps a) to c) for a plurality of frames in said video stream.

20. (Original) The medium of claim 19 wherein step a) further comprises the step of:

- viii) calculating a rate reduction factor for said current frame if needed, otherwise setting a value for a channel bit rate.

21. (Currently Amended) A computer readable medium encoded with a computer program including instructions for controlling the rate of an MPEG video stream to achieve a target bit rate, said instructions comprising, when executed by a processing device, The medium of claim 18 wherein step b) further comprises the steps of:

- a) computing a rate reduction factor;
- b) computing a quantizer scale, wherein computing said quantizer scale comprises:
 - i) calculating a cumulative distribution function for each macroblock in a current frame_i[[;]]
 - ii) initializing a quantizer multiplier array_i[[;]]

- iii) setting the quantizer scale for each macroblock in a current frame₁[[;]]
- iv) calculating a quantizer multiply for each macroblock in the current frame₁[[;]] and
- vi) setting a quantizer scale code for each macroblock in the current frame₁ and [[.]]
- c) applying the results of steps a) and b) to an encoder to achieve said target bit rate; and
- repeating steps a) to c) for a plurality of frames in said video stream.

22. (Cancelled)

23. (Previously Presented) A system for controlling the rate of an MPEG video stream to achieve a target bit rate, said system comprising ~~The system of claim 22 wherein means for computing a rate reduction factor comprises:~~

- a) means for computing a rate reduction factor, wherein the means for computing the rate reduction factor includes
 - i) means for setting said rate reduction factor and a rate increase variable to 0₁[[;]]
 - ii) means for adding the size of a current frame in a frame buffer to a total size variable₁[[;]]
 - iii) means for adding the duration of the current frame to a total delays variable₁[[;]]
 - iv) means for calculating a current value of the number of bits in a video buffer₁[[;]]

v) means for increasing said rate reduction factor if the current value of the number of bits in the video buffer is less than the lower threshold_i[[;]] and

vi) means for increasing said rate increase variable if the current value of the number of bits in the video buffer is greater than the upper threshold_i[[.]]

b) means for computing a quantizer scale;

c) means for applying the results of steps a) and b) to the encoder to achieve said target bit rate; and

repeating steps a) to c) for a plurality of frames in said video stream.

24. (Original) The system of claim 23 wherein said means for computing a rate reduction factor further comprises:

vii) means for calculating a rate reduction factor for said current frame if needed, otherwise setting a value for a channel bit rate.

25. (Currently Amended) A system for controlling the rate of an MPEG video stream to achieve a target bit rate, said system comprising: ~~The system of claim 22~~

a) means for computing a rate reduction factor;

b) means for computing a quantizer scale, wherein said means for computing a quantizer scale comprises:

i) means for calculating a cumulative distribution function for each macroblock in a current frame_i[[;]]

ii) means for initializing a quantizer multiplier array_i[[;]]

iii) means for setting the quantizer scale for each macroblock in the current frame_i[[;]]

iv) means for calculating a quantizer multiply for each macroblock in the current frame_i[:,:] and

means for setting a quantizer scale code for each macroblock in the current frame_i[:,:]

c) means for applying the results of steps a) and b) to an encoder to achieve said target bit rate.